UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,627,336 B2
APPLICATION NO. : 10/596730
DATED : December 1, 2009
INVENTOR(S) : Carlsson et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The title page showing the illustrative figure should be deleted to be replaced with the attached title page.

On the Title Page, item (57), under "ABSTRACT", in Column 2, Line 9, delete "HSPDA" and insert -- HSDPA --, therefor.

On the Title Page, item (57), under "ABSTRACT", in Column 2, Line 15, delete "(P_HS(t-1))" and insert -- (P_H(t-1)) --, therefor.

On the Title Page, item (57), under "ABSTRACT", in Column 2, Lines 20-21, delete "(P_HS(t-1))" and insert -- (P_H(t-1)) --, therefor.

On the Title Page, in the Drawing, for Tag "2", delete "HSPDA" and insert -- HSDPA --, therefor.

On the Title Page, in the Drawing, for Tag "3", delete "HS-SCCH" and insert -- HS_SCCH --, therefor.
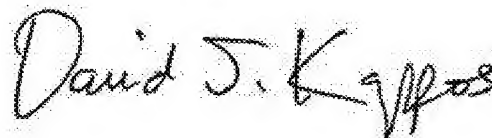
On the Title Page, in the Drawing, for Tag "4", delete "HS-DPSCH" and insert -- HS_DPSCH --, therefor.

On the Title Page, in the Drawing, for Tag "5", delete "HS-DPSCH" and insert -- HS_DPSCH --, therefor.

On the Title Page, in the Drawing, for Tag "6", delete "HS-DPCCH" and insert -- HS_DPCCH --, therefor.

On the Title Page, in the Drawing, for Tag "7", delete "HSPDA" and insert -- HSDPA --, therefor.

Signed and Sealed this
Twenty-second Day of March, 2011

David J. Kappos
Director of the United States Patent and Trademark Office

The drawing sheet, consisting of Fig. 1, should be deleted to be replaced with the drawing sheet, consisting of Fig. 1, as shown on the attached page.

In Fig. 1, Sheet 1 of 8, for Tag "2", delete "HSPDA" and insert -- HSDPA --, therefor.

In Fig. 1, Sheet 1 of 8, for Tag "3", delete "HS-SCCH" and insert -- HS_SCCH --, therefor.

In Fig. 1, Sheet 1 of 8, for Tag "4", delete "HS-DPSCH" and insert -- HS_DPSCH --, therefor.

In Fig. 1, Sheet 1 of 8, for Tag "5", delete "HS-DPSCH" and insert -- HS_DPSCH --, therefor.

In Fig. 1, Sheet 1 of 8, for Tag "6", delete "HS-DPCCH" and insert -- HS_DPCCH --, therefor.

In Fig. 1, Sheet 1 of 8, for Tag "7", delete "HSPDA" and insert -- HSDPA --, therefor.

In Fig. 2, Sheet 2 of 8, delete "N-TH" and insert -- N_TH --, therefor.

In Fig. 5, Sheet 3 of 8, delete "HS-PDSCH" and insert -- HS_PDSCH --, therefor.

In Fig. 5, Sheet 3 of 8, delete "HS-SCCH" and insert -- HS_SCCH --, therefor.

In Fig. 5, Sheet 3 of 8, delete "POWER AMP" and insert -- POWER_AMP --, therefor.

In Fig. 5, Sheet 3 of 8, delete "PWR CTRL" and insert -- PWR_CTRL --, therefor.

In Fig. 5, Sheet 3 of 8, delete "TCP CMD" and insert -- TCP_CMD --, therefor.

In Fig. 7, Sheet 4 of 8, delete "HS-SCCH" and insert -- HS_SCCH --, therefor.

In Fig. 7, Sheet 4 of 8, delete "HS-PDSCH" and insert -- HS_PDSCH --, therefor.

In Fig. 8, Sheet 5 of 8, delete "SCHDEDULE" and insert -- SCHEDULE --, therefor.

In Fig. 9, Sheet 6 of 8, delete "P H(t)" and insert -- P_H(t) --, therefor.

In Fig. 10, Sheet 6 of 8, delete "P H(t)" and insert -- P_H(t) --, therefor.

In Fig. 11, Sheet 6 of 8, delete "P H(t)" and insert -- P_H(t) --, therefor.

In Fig. 12, Sheet 7 of 8, delete "P H(t)" and insert -- P_H(t) --, therefor.

In Fig. 13, Sheet 7 of 8, delete "P H(t)" and insert -- P_H(t) --, therefor.

In Column 1, Line 10, delete "packet" before "downlink".

In Column 1, Line 11, delete "(HSPDA)." and insert -- (HSDPA). --, therefor.

In Column 2, Line 37, delete "HSPDA)"," and insert -- (HSDPA)", --, therefor.

In Column 2, Line 38, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 2, Line 48, delete "HSPDA." and insert -- HSDPA. --, therefor.

In Column 2, Line 51, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 2, Line 53, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 2, Line 56, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 2, Line 57, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 2, Line 66, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 5, delete "non-HSPDA" and insert -- non-HSDPA --, therefor.

In Column 3, Line 7, delete "NON_HSPDA" and insert -- NON_HSDPA --, therefor.

In Column 3, Line 11, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 12, delete "I_HSPDA" and insert -- I_HSDPA --, therefor.

In Column 3, Line 16, delete "the HSPDA" and insert -- the HSDPA --, therefor.

In Column 3, Line 17, after "used" delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 20, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 33, delete "throughput" and insert -- throughput. --, therefor.

In Column 3, Line 38, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 49, delete "HSPDA," and insert -- HSDPA, --, therefor.

In Column 3, Line 52, after "the" delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 53, after "used" delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 3, Line 55, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 4, Line 2, delete "in-put" and insert -- input --, therefor.

In Column 4, Line 8, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 4, Line 12, delete "non-HSPDA" and insert -- non-HSDPA --, therefor.

In Column 4, Line 19, delete "dB/0,67" and insert -- dB/0.67 --, therefor.

In Column 4, Line 61, delete "POWER AMP," and insert -- POWER_AMP, --, therefor.

In Column 5, Line 16, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Line 17, delete "The HSPDA" and insert -- The HSDPA --, therefor.

In Column 5, Line 17, after "schedules" delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Line 21, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Line 23, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Line 31, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Line 32, delete "DATAI," and insert -- DATA1, --, therefor.

In Column 5, Line 33, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Lines 33-34, delete "HS_SCH DR" and insert -- HS_SCHDR --, therefor.

In Column 5, Line 34, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 5, Line 51, delete "(P_HS(t-1))" and insert -- (P_H(t-1)) --, therefor.

In Column 5, Line 57, delete "(P_HS(t-1))" and insert -- (P_H(t-1)) --, therefor.

In Column 6, Line 3, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 18, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 19, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 21, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 32, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 35, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 41, delete "P_Perm" and insert -- P_PERM --, therefor.

In Column 6, Line 48, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 51, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 54, delete "P_POS" and insert -- P_POS(t) --, therefor.

In Column 6, Line 54, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 57, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 6, Line 58, delete "HSPDA" and insert -- HSDPA --, therefor.

In Column 8, Line 11, in Claim 5, delete "(ODMA)" and insert -- (CDMA) --, therefor.

In Column 8, Line 14, in Claim 6, delete "(HSPDA)." and insert -- (HSDPA). --, therefor.

(12) **United States Patent**   (10) **Patent No.:**   **US 7,627,336 B2**

Carlsson et al.   (45) **Date of Patent:**   **Dec. 1, 2009**

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(54) **POWER CONTROL FOR HIGH SPEED PACKET DATA TRANSMISSION**

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Torbjorn Karlsson, Lindome (SE)

(73) Assignee: **Telefonaktiebolaget L M Ericsson (Publ)**, Stockholm (SE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 693 days.

(21) Appl. No.: **10/596,730**

(22) PCT Filed: **Dec. 22, 2003**

(86) PCT No.: **PCT/SE03/02053**

§ 371 (c)(1),
(2), (4) Date: **Jun. 22, 2006**

(87) PCT Pub. No.: **WO2005/062489**

PCT Pub. Date: **Jul. 7, 2005**

(65) **Prior Publication Data**

US 2007/0111745 A1   May 17, 2007

(51) **Int. Cl.**
H04B 7/00	(2006.01)
H04B 1/00	(2006.01)
H04B 7/185	(2006.01)

(52) **U.S. Cl.** 455/522; 455/69; 370/318
(58) **Field of Classification Search** 455/522, 455/69; 370/318
See application file for complete search history.
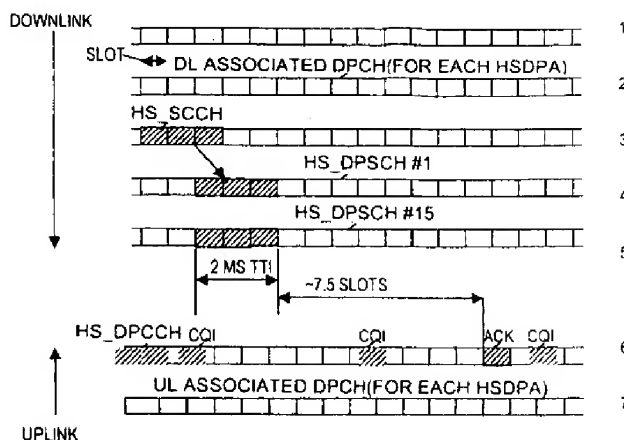
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Primary Examiner—Matthew D Anderson
Assistant Examiner—Bobbak Safaipour
(74) *Attorney, Agent, or Firm*—Roger S. Burleigh

(57)   **ABSTRACT**

A transmitting unit comprising a first unit (CM_SCHDR) receiving scheduled first data (DATA2, DATA3) for transmission on at least a first channel, a power control unit (PWR_C-TRL) for the first channel responsive to a respective closed loop power regulation signal (TCP_CMD), under which at least the transmit power rate of change is limited to a predetermined value per time unit, a packet data scheduler (HS_S-CHDR) scheduling second data packets (DATA1), such as HSPDA data, for transmission on at least a second channel at an actual power level (P_H(t)), and a power amplifier (POW-ER_AMP) amplifying and outputting the scheduled first and second data, whereby the outputted first and second channels are subject to interference from one another, is shown. A possible power (P_POS(t)) is determined at a given instance as the maximum value of either the actual power (P_HS(t−1)) at a previous instance or the possible power determined at a previous instance (P_POS(t−1)), decreasing the maximum value by a predetermined value (d). Moreover, a permitted power (P_PERM(t)) at a given instance as the maximum value of either the actual power of a previous instance (P_HS (t−1)) added with the predetermined value (d) or the determined possible power (P_POS(t)). Finally, the scheduling is performed within these limits.
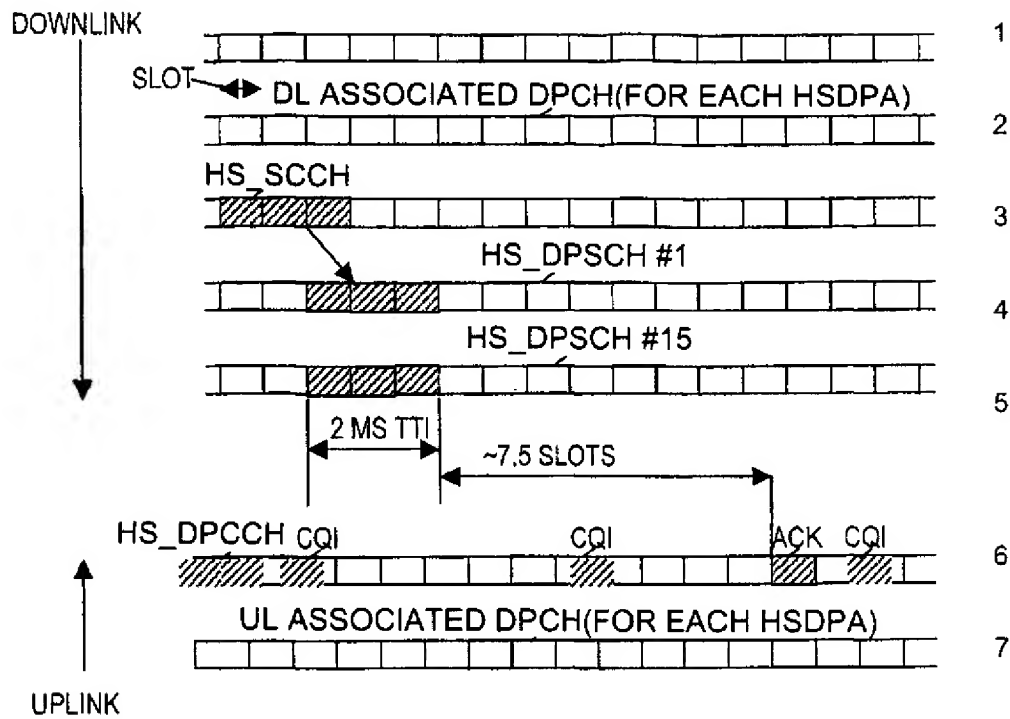
7 Claims, 8 Drawing Sheets

DOWNLINK

1

SLOT ◄► DL ASSOCIATED DPCH(FOR EACH HSDPA)

2

HS_SCCH

3

HS_DPSCH #1

4

HS_DPSCH #15

5

2 MS TTI

~7.5 SLOTS

HS_DPCCH CQI   CQI   ACK CQI

6

UL ASSOCIATED DPCH(FOR EACH HSDPA)

7

UPLINK

FIG. 1